

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20544**

In the Matter of:

Implementing Kari's Law and Section 506 of
RAY BAUM'S Act

PS Docket No. 18-261

Inquiry Concerning 911 Access, Routing, and
Location in Enterprise Communications
Systems

PS Docket No. 17-239

**COMMENTS OF SORENSON COMMUNICATIONS, LLC.
REGARDING E911 FOR VIDEO RELAY SERVICES**

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**COMMENTS OF SORENSON COMMUNICATIONS, LLC.
REGARDING E911 FOR VIDEO RELAY SERVICES**

Sorenson Communications, LLC (“Sorenson”), provider of the majority of Video Relay Service (“VRS”) in the United States, supports the Commission’s efforts to ensure that VRS users can successfully dial 911 to request emergency services and that a Public Safety Answering Point (“PSAP”) can quickly and accurately locate every 911 caller.¹ Sorenson has long implemented its 911 and E911 systems to deliver E911 information, including Registered Location and callback number, to the appropriate PSAP via PSAP selective routers whenever possible. Sorenson is also integrating device-based location information, which will improve the reliability of both 911 call routing and locations provided for mobile and truly nomadic VRS applications.

I. SUMMARY

Sorenson is pleased that the Commission in the NPRM recognizes that VRS providers will need flexibility to implement dispatchable location solutions, and that in some cases they will need to fall back to Registered Location when real-time dispatchable location or high accuracy geolocation data is not available.² VRS operates “over-the-top” of the user’s internet access service, rather than integrated with that service. As such, it is deployed in a variety of settings, over a variety of platforms, each of which presents different challenges and range of potential solutions for obtaining and delivering dispatchable location or high accuracy

¹ *Implementing Kari’s Law and Section 506 of RAY BAUM’S Act and Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems*, Notice of Proposed Rulemaking, FCC 18-132, PS Docket Nos. 18-261 & 17-239 (rel. Sept. 26, 2018) (“*Kari’s Law NPRM*”).

² *Id.* ¶ 81.

geolocation information. Some VRS, including those provided through hardware-based videophones, such as the nTouchVP2 or nTouch Windows or Mac with a desktop computer, are essentially fixed. Others, such as nTouch Windows or Mac when loaded onto a laptop, or iOS or Android versions loaded onto non-CMRS tablets, can be nomadic or mobile, and iOS or Android on smartphone or CMRS-enabled tablets are highly mobile. Any rules need to give VRS providers the flexibility to provide the location data that can feasibly be obtained for the particular platform and customer.

While Paragraph 81 of the NPRM acknowledges the need for flexibility, the proposed rules as drafted do not. VRS providers and their relatively small base of users will not drive technology development for automatically locating mobile users—that will be driven by CMRS and over-the-top mobile VoIP, with hundreds of millions of users, rather than tens of thousands of mobile VRS users. Paragraph 81 strikes an appropriate balance, and will not violate Section 225 by “impair[ing] the development of improved technology.”³

Moreover, any rules should also expressly recognize that, in some instances, the public interest will best be served by routing the call first to a call center that can best determine the caller’s location when a VRS provider has reason to believe that its customer-provided Registered Location may not accurately reflect the caller’s location and lacks other high accuracy location information. In those situations, the brief delay created by routing to the call center can avoid delays that would result if the call were misrouted to the wrong PSAP.

³ 47 U.S.C. 225(d)(2).

II. SORENSON CURRENTLY ROUTES ON AND PROVIDES DISPATCHABLE LOCATION WHENEVER POSSIBLE.

Sorenson recognizes that a 911 call may be the most important call a person ever places.⁴ Accordingly, it has already put in place 911 call-routing and E911 delivery systems that are capable of delivering dispatchable locations for all of its proprietary hardware-based endpoints, *i.e.*, its nTouch VP1 and VP2, and is also working to implement geolocation for its mobile and truly nomadic endpoints, when permitted by users and their underlying devices.

A. Calls from Essentially Fixed Location nTouch Videophones.

A substantial number of Sorenson's 911 calls (approximately 45%⁵) are placed via its proprietary, hardware-based nTouch videophones. These installations are theoretically capable of moving, but usually do not move. For these phones, Sorenson's customer provided Registered Location will likely be a dispatchable location and Sorenson can have a high level of confidence that it has not changed.

As it does for all of its users, Sorenson collects a Registered Location from its end user at the time it provisions these videophones. The Registered Location collected asks the user to supply not just the street address, but also apartment or suite number where applicable. For hardware-based nTouch videophones, this is a particularly reliable location for several reasons. First, Sorenson's nTouch videophones are nearly always installed by a Sorenson field technician. When the Sorenson field technician installs that phone, he or she knows where the phone is

⁴ See, e.g., *911 Governance & Accountability Improving 911 Reliability*, Policy Statement and Notice of Proposed Rulemaking, FCC 14-186, 29 F.C.C. Rcd. 14,208 ¶ 1 (2014) ("These three digits – 911 – are now among the first phone numbers that parents teach to their children, and dialing 911 may be the most important call that we ever make.").

⁵ This percentage is based on 911 calls lasting more than 5 seconds within a recent 30-day period. All 911 call percentages in these comments are calculated similarly.

being installed, and, with the customer's agreement, can input that address as the customer's 911 Registered Location. Second, because configuring a videophone is relatively complicated, if a customer does move, the customer is likely to place a service call to have the videophone reinstalled at the new location. Third, Sorenson has implemented a prompt on its hardware-based nTouchVPs that asks the user to reconfirm his or her 911 Registered Location whenever the videophone has been powered down. If the customer does not confirm the existing Registered Location as the address where the phone is being used, the videophone then provides a screen on which the user must update his or her Registered Location. Finally, for all 911 calls, the Video Interpreter ("VI") will simultaneously speak and sign when providing the Registered Location to the PSAP. This allows the caller to correct their location if it is not correct.

Sorenson's 911 services are supported by West Safety Services ("West") in a manner similar to over-the-top VoIP services.⁶ Sorenson provides the Registered Location it receives from the end user to West, which validates the address and then stores it with a unique identifier in its database. If the customer's address cannot be validated, West notifies Sorenson and Sorenson attempts to resolve the address with its customer. The customer will be unable to place a call other than 911 if the address cannot be validated.

For these devices, Sorenson is dependent upon the user correctly reporting his or her location. Sorenson does not have a way of automatically detecting whether or not the user has accurately reported their location. Sorenson does not have independent access to a database of

⁶ See *IP Enabled Services; E911 Requirements for IP-Enabled Service Providers, First Report and Order and Notice of Proposed Rulemaking*, 20 F.C.C. Rcd. 10,245, 10,282, ¶ 46 n. 146 (2005) ("*VoIP 911 Order*").

Wi-Fi router locations, and in any event, such a database would not capture videophones that are connected by wire to an internet router.

When a user places a 911 call, the call goes to the top of the call queue to be handled by the next available Video Interpreter (“VI”). Sorenson frequently uses two VIs for a 911 call, to ensure the highest quality interpretation. In rare cases where Sorenson has not been able to MSAG-validate a customer’s address with West, Sorenson passes the call to the West ECRC. West then confirms the address, routes the call to the appropriate PSAP via the Wireline E911 Network based on the location, and delivers the Registered Location and VRS user’s number to the PSAP.⁷

B. Calls from Mobile and Nomadic Software-Based Endpoints.

As required by the current VRS rules, Sorenson collects a 911 Registered Location from its nomadic and mobile-based users at the time they install and activate their software-based videophone. The software will also prompt the user to update the address if the software is installed on a different device. That address is then provided to West for MSAG validation and storage in West’s database. As with hardware-based nTouch VPs, if the address does not validate, Sorenson follows up with the customer to collect a verifiable address, and the customer cannot make a non-911 call from the application until a valid Registered Location address has been provided.

Sorenson recognizes that these software-based endpoints loaded onto cell phones, tablets, or laptops are much more likely to move than its hardware-based end points. The vast majority of the 911 calls placed through these soft VPs are through Sorenson’s iOS and Android VPs,

⁷ Across all Sorenson VRS, including both fixed and mobile, approximately 15% of all 911 calls from Sorenson customers are handled by the ECRC.

which account for approximately 53% of all of Sorenson's 911 calls (fixed, nomadic, or mobile). Accordingly, for 911 calls from its mobile and nomadic software endpoints, the VI will always confirm the caller's location. This allows the VI to connect directly to the PSAP (via West) if the caller is at her Registered Location, or to route the call to the West ECRC call center if the caller is located elsewhere.⁸

In addition, Sorenson is currently implementing device-based location for 911 calls that are placed from devices that provide that data.⁹ When Sorenson's ability to utilize device-based location is fully implemented and operational, the customer's device is capable of providing location,¹⁰ and the consumer has consented to allowing the VRS application to access location information, the customer's device will automatically determine an x, y (and, where available, z) location estimate, which Sorenson can then obtain from the device. When the device provides a geolocation estimate, both the geolocation estimate and the Registered Location are provided to West.¹¹ If the geolocation estimate is within 50 meters of the customer-provided Registered Location, West routes on and passes the customer-provided Registered Location to the PSAP; otherwise, West routes on and passes the geolocation to the PSAP. As with calls from hardware-based endpoints, West routes these calls to the PSAP utilizing the Wireline 911 Network and

⁸ For calls from Windows or Mac-based soft VPs, the VI will simultaneously speak and sign the caller's Registered Location to the PSAP. That allows the caller to correct the location if it is not correct.

⁹ The handsets use a variety of location inputs to determine location, which will vary depending upon the device as well as the customer's configuration of settings and permissions on the device. *See, e.g.*, "About privacy and Location Services in iOS 8 and later," available at: <https://support.apple.com/en-us/HT203033>.

¹⁰ Not all devices provide device-based location.

¹¹ In order to route the call, the geolocation obtained is the estimated location at the time the call is routed to the VI from the hold server. Locations are not updated after the call is routed to the VI.

delivers the Registered Location, VRS user's number (*i.e.*, ANI), the VI's callback number, and the VI's ID to the PSAP.

Notably, device-based location estimates are accessed in the user plane, rather than the control plane. This means that they are not available when the customer has not activated or consented to Sorenson's use of this location data. Unlike CMRS 911 calls, which are placed in the control plane, Sorenson will not be able to activate or access that customer's location when 911 calls are placed, if device-based location is not already active.

III. WHILE SORENSON STRIVES TO DELIVER DISPATCHABLE LOCATIONS, THE PROPOSED RULES DO NOT PROVIDE THE FLEXIBILITY REFLECTED IN THE NPRM AND WOULD NOT BE TECHNICALLY FEASIBLE FOR ALL VRS APPLICATIONS.

The NPRM, in its text, recognizes that TRS providers, including VRS providers, need “flexibility in implementing dispatchable location solutions.” Accordingly, the NPRM proposes to permit TRS providers “to fall back to Registered Location options when real-time dispatchable location is not feasible.”¹² This is the right idea and should be incorporated into the actual rule text.

Some of the proposed new post- February 16, 2020 requirements will be feasible. For example, the VI can ask the caller's name and dispatchable location at the start of the call if the VI does not already have such a location, and it can prioritize 911 calls to the top of the queue, as it already does.¹³ Sorenson itself or through the West ECRC can also continue to provide its name as relay provider, the VI's callback number and the VI's identification number.¹⁴ Sorenson

¹² *Kari's Law NPRM* ¶ 81.

¹³ See Proposed Rule 9.14(b)(2)(ii), (iv).

¹⁴ See Proposed Rule 9.14(d)(2)(ii).

also can work immediately to re-establish contact with the PSAP and caller, respectively, if one or both legs of the call are disconnected.¹⁵

The requirement in Proposed Rule 9.14(d)(2)(ii) to provide a dispatchable location with each 911 call, however, is not technically feasible for all VRS calls and is inconsistent with the proposal in Paragraph 81 of the NPRM to permit VRS providers “fall back to Registered Location options when real-time dispatchable location is not feasible.”¹⁶ In the first instance, for mobile VRS calls for which Sorenson is able to obtain automatic geolocation data from the handset or tablet, the information available will be x, y, and potentially z- axis coordinates, which do not meet the definition of “dispatchable location.”¹⁷ The CMRS rules expressly recognize this, allowing for the delivery of dispatchable location or x, y coordinates.¹⁸ Furthermore, because device-based location requires both an underlying device with location capabilities, *and* user consent to enable location services, Sorenson will lack both x, y coordinates and the correct dispatchable location if the user’s device does not have location capabilities or if the user has not consented to location services. In that instance, Registered Location will be the best information available unless the caller informs the VI of her location

¹⁵ See Proposed Rule 9.14(b)(2)(vi). Of course, in some cases it may not be possible to do so due to factors beyond Sorenson’s control.

Proposed Rule 9.14(b)(2)(vii) is identical to current 47 C.F.R. § 64.605(a)(2)(vi). This provision is no longer necessary because these same protections are ensured by the TRS CPNI rules, 47 C.F.R. 64.5101, *et seq.* As such Proposed Rule 9.14(b)(2)(vii) should be deleted or converted to a cross-reference to the CPNI rules.

¹⁶ *Kari’s Law NPRM* ¶ 81.

¹⁷ A “dispatchable location” is defined as a “street address of the calling party, plus additional information such as suite, apartment or similar information necessary to adequately identify the location of the calling party.”

¹⁸ See, e.g., 47 C.F.R. § 20.18(i)(2)(i), and Proposed Rule § 9.10(i)(2)(i).

during call set-up. In addition, there are going to be some instances in which a dispatchable location will not be available, despite the best efforts to obtain one. For example, a caller may place a 911 call from a location other than his or her Registered Location and be unable to sign the address clearly or adequately. This could be true both for mobile and nomadic software-based VPs, and even for hardware-based nTouch VPs if the user has moved the VP himself but has not yet used the VP and thus been required to update the Registered Location. Because it will likely be difficult to catalogue specifically all such instances, the Commission should follow its proposal in Paragraph 81 and permit Registered Location to be delivered whenever dispatchable location or a sufficiently reliable geolocation are not available.

In addition, Proposed Rule 9.14(d)(4)(C) would require a VRS provider to be able to identify whenever any videophone, whether hardware-based or software-based, has been moved from its Registered Location, and then either prompt the user to provide a new Registered Location or update the Registered Location without any additional action by the user. This requirement is also not technically feasible for all VRS calls, and ignores that there are alternative means of achieving the same objectives. For example, for its hardware-based VPs, although Sorenson has no ability to detect whether the VP has changed geographic location at the level of dispatchable location or high accuracy geolocation, or within specific PSAP boundaries, the VP cannot be moved without being powered down, and Sorenson requires the user to reconfirm her Registered Location each time the unit is powered down. For mobile soft VPs, even once Sorenson has fully implemented device-based location, it will not be able to detect whether the user has changed locations if the user has not enabled device-based location or if the user's device lacks location capabilities. As discussed above, Sorenson does not have

independent access to a database of the geographic location of Wi-Fi hotspots, and thus does not have that information available to detect when a user has changed locations.

The NPRM asks whether the National Emergency Address Database (“NEAD”), once it is operational, could help enable VRS providers to provide more dispatchable locations.

Because Sorenson operates in the user plane and not in the control plane, the NEAD may not be available to it. The NEAD is designed for use by wireless carriers, not over-the-top providers, and thus operates in the control plane. As a result, under Sorenson’s current technical configurations, it would not be able to access and utilize the NEAD.¹⁹ Moreover, wireless handset manufacturers and/or carriers would have to make the necessary APIs available for Sorenson, an over-the-top provider, to be able to access and utilize control plane location information for 911 calls even if the user has not allowed it. All of this supports the Commission’s proposal in Paragraph 81 to require VRS providers to fall back to Registered Location when real-time dispatchable location or a high-accuracy geolocation is not available. Sorenson will continue to strive to provide either dispatchable location or a high accuracy geolocation whenever possible, but it will not always be possible.

IV. THE COMMISSION SHOULD NOT PRECLUDE VRS PROVIDERS FROM ROUTING A 911 CALL TO A CALL CENTER WHEN THE PROVIDER BELIEVES THE REGISTERED LOCATION MAY NOT BE SUFFICIENTLY RELIABLE.

Although Sorenson today has dispatchable locations for many 911 calls, and is implementing geolocation to obtain high accuracy locations for many more, there will remain a small minority of calls for which Sorenson may have no or insufficiently reliable location

¹⁹ Should it become capable of accessing the NEAD, Sorenson believes that the NEAD should be required to be available to VRS providers.

information at the time of the call. For example, if the user's Registered Location did not validate properly through West, if Sorenson can see from the geographic location associated with the IP address that the caller likely is not at the Registered Location, or if Sorenson does not receive a geolocation estimate from the handset in time to route the call, receives a garbled geolocation, or receives a geolocation estimate with a sufficiently large range of error, it may not be able to determine the appropriate PSAP to receive the call. In that case, it can route the call to the PSAP associated with the Registered Location it has, or it can route the call to the West ECRC (or a similar service) so that the location can be determined and then routed to the appropriate PSAP. For Sorenson, this currently affects approximately 15% of 911 calls.

The public interest is best served in these situations by routing these 911 calls to the ECRC. This minimizes the likelihood that the 911 call will be misrouted, and then have to be transferred from one PSAP to another. The potential delay from routing to the ECRC will be offset by avoiding the delay that would result from transferring calls among the PSAPs.

Notably, Sorenson is not proposing that the Commission permit a VRS provider to use a call center as its primary method of handling 911 calls. Providers still should be required to collect Registered Location, and to route using dispatchable location, high accuracy geolocation or Registered Location when the provider can be sufficient confident that such locations are correct, or at least be likely to route to the appropriate PSAP. However, the Commission should make clear that an ECRC or similar service is permissible in the narrow set of circumstances when the provider cannot be confident that these locations will result in routing the call to the correct PSAP.

CONCLUSION

Sorenson strongly supports the Commission's efforts to ensure that the best-possible locations are provided to First Responders along with 911 calls. This will reduce response times and save lives. However, the proposed rules as drafted need to be revised in order to be technically feasible for VRS across the range of its operating environments, including mobile VRS.

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Respectfully Submitted,



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